AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. The following listing provides the amended claims with the amendments marked with deleted material crossed out and new material underlined to show the changes made.

1. (Currently Amended) A method of performing mode selection in a video compression and encoding system, said method comprising:

encoding ~~and decoding~~ with a plurality of ~~each possible~~ encoding modes ~~mode~~ from a set of encoding modes;

computing a distortion value for each encoding mode from the plurality of encoding modes, wherein computing said distortion value comprises using a function that reduces the effects of outliers;

computing a bit rate value for each encoding mode from the plurality of encoding modes;

computing a Lagrangian value for each encoding mode from the plurality of encoding modes, using said distortion value, said bit rate value, and a Lagrangian multiplier ; and

selecting an encoding mode based on ~~using~~ said Lagrangian values.

2. (Currently Amended) The method as claimed in claim 1, wherein ~~computing said distortion value comprises using~~ the function is a Huber function.

3. (Currently Amended) The method as claimed in claim 1, wherein computing said bit rate value comprises a total number of bits that are necessary to encode a set of motion vectors and a set of transform coefficients.

4. (Currently Amended) The method as claimed in claim 1, wherein said Lagrangian multiplier comprises a slow varying Lagrangian multiplier as a function of a quantization value.

5. (Currently Amended) The method as claimed in claim 1, wherein selecting an encoding mode using said Lagrangian values comprises clustering said Lagrangian values and selecting a mode 0 encoding method if said mode 0 encoding method is in a specific cluster.

6. (Currently Amended) The method as claimed in claim 5, wherein said specific cluster includes an encoding mode that produces a smallest Lagrangian value.

7. (Currently Amended) A method of performing mode selection in a video compression and encoding system, said method comprising:

encoding ~~and decoding~~ with a plurality of ~~each possible~~ encoding modes ~~mode~~ from a set of encoding modes;

computing a distortion value for each encoding mode from the plurality of encoding modes;

computing a bit rate value for each encoding mode from the plurality of encoding modes;

computing a Lagrangian value for each encoding mode from the plurality of encoding modes, using said distortion value, said bit rate value, and a Lagrangian multiplier, wherein said Lagrangian multiplier comprises a slow varying Lagrangian multiplier as a function of a quantization value, wherein said slow varying Lagrangian multiplier varies at a slower rate than a varying reference Lagrangian multiplier for a reference encoding mode; and

selecting an encoding mode based on ~~using~~ said Lagrangian values.

8. (Currently Amended) The method as claimed in claim 7, wherein computing said distortion value comprises using a function that reduces the effects of outliers.

9. (Currently Amended) The method as claimed in claim 7, wherein computing said distortion value comprises using a Huber function.

10. (Currently Amended) The method as claimed in claim 7, wherein computing said bit rate value comprises a total number of bits that are necessary to encode a set of motion vectors and a set of transform coefficients.

11. (Currently Amended) The method as claimed in claim 7, wherein selecting an encoding mode using said Lagrangian values comprises clustering said Lagrangian values and selecting a mode 0 encoding method if said mode 0 encoding method is in a specific cluster.

12. (Currently Amended) The method as claimed in claim ~~5~~ 11, wherein said specific cluster includes an encoding mode that produces a smallest Lagrangian value.

13. (Currently Amended) A method of performing mode selection in a video compression and encoding system, said method comprising:

encoding ~~and decoding~~ with a plurality of ~~each possible~~ encoding modes ~~mode~~ from a set of encoding modes;

computing a distortion value for each encoding mode from the plurality of encoding modes;

computing a bit rate value for each encoding mode from the plurality of encoding modes;

computing a Lagrangian value for each encoding mode from the plurality of encoding modes, using said distortion value, said bit rate value, and a Lagrangian multiplier;

clustering said Lagrangian values; and

selecting an encoding mode based on ~~using~~ said Lagrangian values by selecting a mode 0 encoding method if said mode 0 encoding method is in a specific cluster.

14. (Currently Amended) The method as claimed in claim 13, wherein computing said distortion value comprises using a function that reduces the effects of outliers.

15. (Currently Amended) The method as claimed in claim 13, wherein computing said distortion value comprises using a Huber function.

16. (Currently Amended) The method as claimed in claim 13, wherein computing said bit rate value comprises a total number of bits that are necessary to encode a set of motion vectors and a set of transform coefficients.

17. (Currently Amended) The method as claimed in claim 13, wherein said Lagrangian multiplier comprises a slow varying Lagrangian multiplier as a function of a quantization value.

18. (Currently Amended) The method as claimed in claim 13, wherein said specific cluster includes an encoding mode that produces a smallest Lagrangian value.

19. (Original) The method as claimed in claim 13, said method further comprising:

selecting an encoding mode that produces a smallest Lagrangian value if said mode 0 encoding method is not in a specific cluster.